

DIABETES IN MICHIGAN

Estimated Number of Persons With Diabetes (PWD) in Michigan

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **590,000 adults (aged 18 and up) have been diagnosed with diabetes.**¹ This includes an estimated **28,000 Latinos/Hispanics (8.65%)** diagnosed with diabetes.² In addition, it is estimated that **8,700 or 0.32% persons under the age of 18** have been diagnosed with diabetes.³ National studies suggest that an additional **227,900 Michigan adults have diabetes but are not aware of it.**⁴ Among Michigan adults, **1,533,000 have Pre-diabetes** (40.1% of adults 40-74 years of age).⁵

Estimated Number of Persons in Michigan in 2002 Diagnosed with Diabetes (Rate per 100)¹

| Age Group | Total | Female | Male | White | African American |
|------------------|------------------------|-----------------------|-----------------------|-----------------------|-------------------------|
| 18-44 | 98,700 (2.5) | 46,600 (2.4) | 51,900 (2.5) | 72,800 (2.3) | 18,700 (3.2) |
| 45-54 | 122,700 (8.5) | 65,100 (8.9) | 56,800 (8.1) | 93,500 (7.7) | 21,500 (11.5) |
| 55-64 | 134,900 (14.5) | 67,300 (13.9) | 67,300 (15.1) | 100,100 (12.7) | 27,700 (27.5) |
| 65-74 | 120,800 (18.5) | 64,700 (18.6) | 56,000 (18.4) | 88,300 (15.7) | 27,400 (40.6) |
| 75+ | 112,800 (18.9) | 69,100 (17.9) | 44,500 (20.6) | 95,000 (17.7) | 16,900 (30.5) |
| Total | 590,000* (7.8) | 312,800 (8.0) | 276,900 (7.5) | 450,100 (7.1) | 112,300 (11.4) |
| (95% CI**) | (" 37,240) | (" 26,500) | (" 27,300) | (" 32,400) | (" 19,600) |

* Difference in totals is due to presence of 27,000 of "other races" in the survey and the effects of rounding.

** 95% CI represents the range within which the actual number of persons with diabetes in Michigan may fall with 95% confidence.

Diabetes Deaths

In 2002, diabetes was the sixth leading cause of death for Michigan residents. Diabetes was the primary cause of death for 2,753 individuals (3.1% of deaths) and a contributing cause in an additional 5,381 deaths (6.1%).⁶

Deaths in Michigan of PWD for the Year 2002 with Diabetes Listed as the Primary Cause **Data is: Number of Deaths (Crude Death Rates per 1,000 Diabetic Population)**

| Age Group | Total | White | | African American | |
|------------------|----------------------|---------------------|---------------------|-------------------------|-------------------|
| | | Female | Male | Female | Male |
| 0-44 | 117 (1.2) | 41 (1.3) | 49 (1.4) | 10 (1.0) | 15 (2.0) |
| 45-54 | 219 (1.8) | 58 (1.3) | 96 (2.1) | 28 (2.0) | 34 (4.7) |
| 55-64 | 349 (2.6) | 118 (2.3) | 154 (3.0) | 35 (2.4) | 38 (2.6) |
| 65-74 | 592 (5.1) | 223 (5.0) | 241 (5.8) | 67 (3.6) | 47 (5.2) |
| 75+ | 1,476 (12.9) | 745 (13.4) | 543 (13.4) | 113 (9.6) | 61 (11.5) |
| Total | 2,753* (4.7) | 1,185 (5.2) | 1,083 (4.9) | 253 (3.7) | 195 (4.4) |

* Difference in the totals is due to presence of 37 deaths of "other races."

Chronic Kidney Disease (CKD)⁷

Prevalence of Chronic Kidney Disease (CKD) is estimated at 816,000 (10.9%) of Michigan adults. The two main causes of the 3,550 newly diagnosed cases of kidney failure in Michigan residents in 2002 were diabetes (1,562 or 44.0%) and hypertension (1,069 or 30.1%). In 2002, people with kidney failure due to diabetes received 307 (36%) of the 845 kidney transplants performed.

As of December 31, 2002, a total of 10,221 persons were on kidney dialysis and 4,575 persons were living with a kidney transplant. People with diabetes accounted for 4,272 (42.3%) receiving dialysis and 1,838 (25.5%) of those living with a transplant. The estimated annual cost for kidney transplant and dialysis for people with diabetes in Michigan is \$310 million of an estimated \$750 million for all cases of kidney failure.

Diabetes Costs

In 2002, estimated expenditures for diabetes-related medical care in Michigan exceeded \$4.7 billion with an additional \$5.7 billion a year in lost productivity due to premature death, disability and illness.⁸

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Diabetic Retinopathy⁹

The National Eye Institute, National Institutes of Health estimates there are 197,500 persons aged 40 and up in Michigan with diabetic retinopathy. This equates to 4 of every 10 people with diabetes in this age group (40.3%).

Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)¹⁰

In 2002, there were 221,409 hospital discharges of Michigan residents where diabetes was listed among the diagnosis. There were 15,459 (7.0%) of these hospitalizations that were directly due to diabetes, while an additional 72,293 (32.7%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 193,413 discharges with 14,550 (7.5%) directly attributed to diabetes.

Primary Reason for Hospitalization (percent of total number of discharges with diabetes listed)

| Condition | 2000 | | 2002 | |
|--------------|----------------|-------------|----------------|-------------|
| | Count | Percent | Count | Percent |
| Diabetes | 14,550 | 7.5% | 15,459 | 7.0% |
| Hypertension | 4,058 | 2.1% | 4,330 | 2.0% |
| Other CVD | 63,853 | 33.0% | 67,963 | 30.7% |
| Kidney | 2,015 | 1.0% | 2,902 | 1.3% |
| Pneumonia | 6,363 | 3.3% | 7,422 | 3.4% |
| Other | 102,574 | 53.0% | 123,242 | 55.7% |
| TOTAL | 193,413 | 100% | 221,409 | 100% |

Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 1,475 or 9.5% of the 15,459 hospital discharges with a primary diagnosis of diabetes. This compares to 1,564 amputations or 10.0% of the 14,550 hospitalizations of persons with diabetes in 2000.

Behavioral Risk Factor Surveillance System (BRFSS)¹¹

According to the results of the U.S. 2002 BRFSS, Michigan had the 7th highest diabetes prevalence rate (7.9%) among all states, the 7th highest rate for being at risk of complications due to obesity (25.7%) and the 17th highest rate for smoking (24.2%).

Risk Factors in Michigan for Diabetes Related Complications¹²

PWD* have BETTER rates of risk factors**

| Characteristic | PWD | Others |
|----------------------------|-------|--------|
| Have NO insurance | 6.7% | 11.4% |
| Drank Alcohol - past month | 32.8% | 60.8% |
| Current Smoker | 20.0% | 25.6% |
| Former smoker | 39.1% | 25.2% |
| Flu shot - last 12 months | 51.7% | 26.0% |
| Pneumonia shot - ever | 44.8% | 19.6% |

PWD* have WORSE rates of risk factors**

| Characteristic | PWD | Others |
|-----------------------------|-------|--------|
| Told blood pressure high | 64.3% | 23.8% |
| Told cholesterol high | 55.6% | 25.8% |
| Overweight and obese | 83.8% | 59.7% |
| No exercise - last month | 36.6% | 22.3% |
| Lost 6 or more teeth (2002) | 41.8% | 15.2% |

* PWD - Persons With Diabetes

** 2001-2003 data

Michigan's Progress on Key Health Indicators¹²

| Indicator: | 1997/8/9 | 2000/1 | 2001/3 |
|------------------|----------|--------|--------|
| No Insurance | 3.9% | 5.3% | 6.7% |
| Hypertension | 57.4% | 61.7% | 64.3% |
| Overweight/obese | 60.8% | 81.0% | 83.8% |
| Flu shot | 55.5% | 45.9% | 51.7% |
| Pneumonia Shot | 38.6% | 40.2% | 44.8% |

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS), a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% " 1.66 Confidence Interval (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2002 and BRFSS 2001-2003 data (0.26% + 20% for CDC underreporting = 0.32%).
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2002.
- 6) Michigan Department of Community Health death certificate data files.
- 7) Renal Network of the Midwest, Inc. End Stage Renal Disease Network 11, 2002 Annual report. June 2003.
- 8) "Diabetes Care," 21:2 P296 Feb. 1998.
- 9) The Prevalence of Diabetic Retinopathy Among Adults in the United States. Arch Ophthalmol/Vol 122, Apr. 2004 PP 552-563.
- 10) Michigan Inpatient (hospital discharge) Data Base (MIDB) for 2002.
- 11) BRFSS 2002 national data from the CDC web page <http://www.cdc.gov/nccdphp/brfss/>.
- 12) Michigan 2002 population estimates and the three year (2001-03) average from the BRFSS.

Both an explanatory page and further information can be obtained from:

Michigan Department of Community Health, Division of Chronic Disease and Injury Control/Diabetes, Kidney and Other Chronic Diseases Section at (517) 335-8445 or <http://www.michigan.gov/diabetes>